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WHAT IS CLAIMED IS:

AS 1. An intelligent network for use with an ATM network to set up an ATM switched virtual circuit to provide VToA services and closed user group services, the intelligent network comprising:

5 a multi-service control point operable to receive an input extracted from an input ATM setup message that includes a called party phone number value and a VToA designator, execute a closed user group service to determine whether to authorize a VToA call between a calling party and a called party, and generate an output in response for use in generating an output ATM setup message;

10 an ATM signaling intercept processor operable to intercept the input ATM setup message from an ingress ATM edge switch of the ATM network, extract the input from the input ATM setup message, communicate the input to the multi-service control point, receive the output generated by the multi-service control point, generate the output ATM setup message using the output, and communicate the output ATM setup message to the ingress ATM edge switch of the ATM network; and

20 a service administration operable to provision the multi-service control point and the ATM signaling intercept processor.

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AS 3. The intelligent network of Claim 2, wherein the multi-service control point, in order to execute the closed user group service, is operable to further perform the following:

5 examine all remaining privileges for all privilege sets of closed user groups in which the calling party is a member and the called party is not a member to determine if the calling party can make calls to other users outside of a closed user group, and

10 examine all remaining privileges for all privilege sets of closed user groups in which the called party is a member and the calling party is not a member to determine if the called party can receive calls from other users outside of a closed user group, and wherein a VToA call between the calling party and the called party is completed if the calling party can make calls to other users outside of a closed user group, and the called party can receive calls from other users outside of a closed user group.

20 4. The intelligent network of Claim 1, wherein the input includes a calling party phone number value.

25 5. The intelligent network of Claim 3, wherein the called party phone number value is stored in a called party subaddress parameter of the input ATM setup message, the VToA designator is stored in a called party number parameter of the input ATM setup message, the calling party phone number value is stored in a calling party subaddress parameter of the input ATM setup message, and the ATM address of the calling party CPE is stored in a calling party number parameter of the input ATM setup message.

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6. The intelligent network of Claim 1, wherein the multi-service control point determines if the input ATM setup message requests an SVC for VToA by analyzing the VToA designator portion of the input.

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7. The intelligent network of Claim 1, wherein the multi-service control point further includes:

a database that correlates the called party phone number value with an ATM address of the called party CPE, and wherein the multi-service control point includes the ATM address of the called party CPE in the output.

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8. The intelligent network of Claim 1, wherein the multi-service control point includes various applications operable to provide VToA services through analyzing the input to generate the output.

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9. A method for providing VToA and closed user group services using an intelligent network and a switched virtual circuit over an ATM network, the method comprising:

5        intercepting an input ATM setup message from an ingress ATM edge switch of the ATM network;

         extracting information from the input ATM setup message;

         analyzing the information to determine if the input ATM setup message is a request to set up an SVC for VToA;

10        executing a closed user group service to determine whether to authorize a VToA call between a calling party and a called party;

         determining an ATM address of a called party CPE;

15        generating an output ATM setup message that includes the ATM address of a called party CPE; and

         communicating the output ATM setup message to the ingress ATM edge switch of the ATM network.

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AS 10. The method of Claim 9, wherein executing a closed user group service to determine whether to authorize a VToA call between a calling party and a called party further includes:

5 determining the closed user group identifiers for a calling party;

determining the closed user group identifiers for a called party;

10 locating a common closed user group identifier that is common to the calling party and the called party;

analyzing the privileges of the calling party in the common closed user group to determine if the calling party can make calls to other users of the common closed user group; and

15 analyzing the privileges of the called party in the common closed user group to determine if the called party can receive calls from other users of the common closed user group, and wherein a VToA call between the calling party and the called party is completed if a  
20 common closed user group identifier is located, the calling party has privileges to call other users of the common closed user group, and the called party has privileges to receive calls from other users of the common closed user group.

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11. The method of Claim 10, wherein executing a closed user group service to determine whether to authorize a VToA call between a calling party and a called party further includes:

5           examining all remaining privileges for all privilege sets of closed user groups in which the calling party is a member and the called party is not a member to determine if the calling party can make calls to other users outside of a closed user group; and

10           examining all remaining privileges for all privilege sets of closed user groups in which the called party is a member and the calling party is not a member to determine if the called party can receive calls from other users outside of a closed user group, and wherein a  
15 VToA call between the calling party and the called party is completed if the calling party can make calls to other users outside of a closed user group, and the called party can receive calls from other users outside of a closed user group.

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12. A method for providing a closed user group service to authorize VToA calls using an intelligent network and a switched virtual circuit over an ATM network, the method comprising:

5 determining the closed user group identifiers for a calling party;

determining the closed user group identifiers for a called party;

10 locating a common closed user group identifier that is common to the calling party and the called party;

analyzing the privileges of the calling party in the common closed user group to determine if the calling party can make calls to other users of the common closed user group; and

15 analyzing the privileges of the called party in the common closed user group to determine if the called party can receive calls from other users of the common closed user group, and wherein a VToA call between the calling party and the called party is completed if a common closed user group identifier is located, the calling party has privileges to call other users of the common closed user group, and the called party has privileges to receive calls from other users of the common closed user group.

20 13. The method of Claim 12, wherein the calling party does not have privileges to call other users of the common closed user group, the method further comprising:

25 locating another common closed user group identifier that is common to the calling party and the called party and proceeding to analyzing the privileges of the calling party.

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AS 14. The method of Claim 12, wherein the called party does not have privileges to receive calls from other users of the common closed user group, the method further comprising:

5 locating another common closed user group identifier that is common to the calling party and the called party and proceeding to analyzing the privileges of the calling party.

10 15. The method of Claim 12, wherein a common closed user group identifier cannot be located that is common to the calling party and the called party, the method further comprising:

15 examining all remaining privileges for all privilege sets of closed user groups in which the calling party is a member and the called party is not a member to determine if the calling party can make calls to other users outside of a closed user group; and

20 examining all remaining privileges for all privilege sets of closed user groups in which the called party is a member and the calling party is not a member to determine if the called party can receive calls from other users outside of a closed user group, and wherein a VToA call between the calling party and the called party is  
25 completed if the calling party can make calls to other users outside of a closed user group, and the called party can receive calls from other users outside of a closed user group.

30 16. The method of Claim 15, wherein a VToA call fails if the calling party does not have privileges to make calls to other users outside of a closed user group.

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AS 17. The method of Claim 15, wherein a VToA call fails if the called party does not have privileges to receive calls from other users outside of a closed user group.

5 18. The method of Claim 12, wherein the method is performed at a multi-service control point of the intelligent network.

10 19. The method of Claim 12, wherein the ATM network does not provide an interlocking code.

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20. A data structure on a storage media for defining closed user groups to authorize VToA calls using an intelligent network and a switched virtual circuit over an ATM network, the structure comprising:

5 a plurality of users, wherein each of the plurality of users are defined by an ATM address;

10 a plurality of user groups, wherein each of the plurality of user groups are defined by an association with a collection of the plurality of users, and wherein each user of the plurality of users may only be a member of one user group;

15 a plurality of privilege sets, wherein each of the plurality of privilege sets are defined by a privilege value that represents a plurality of privileges; and

20 a plurality of closed user groups, wherein each of the plurality of closed user groups are defined by a closed user group identifier that is associated with a plurality of user group/privilege set combinations, wherein each of the plurality of user group/privilege set combinations are associated with a user group of the plurality of user groups and a privilege set of the plurality of privilege sets.

25 21. The data structure on a storage media of Claim 20, wherein a user group may be provided in a first user group/privilege set combination with a first privilege set, and in a second user group/privilege set combination with a second privilege set.

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22. The data structure on a storage media of Claim 21, wherein the user group may be associated with a first closed user group identifier through the first user group/privilege set combination, and with a second closed user group identifier through the second user group/privilege set combination.

23. The data structure on a storage media of Claim 20, wherein each of the plurality of users is associated with only one of the plurality of user groups.

24. The data structure on a storage media of Claim 20, wherein all users of the plurality of user group/privilege set combinations that define a closed user group are considered members of the closed user group.

25. The data structure on a storage media of Claim 24, wherein the plurality of privileges of a privilege set includes:

a privilege to allow calls to other members of a closed user group,

a privilege to allow calls from other members of the closed user group,

a privilege to allow calls to others that are not members of the closed user group, and

a privilege to allow calls from others that are not members of the closed user group.